

Appendix 2.2

Network Provider Points of Presence by LATA

LATA Number	LATA Name	Total Included Networks with POPs	Network Provider with POP in LATA									
			AT&T	MCI	Sprint	WorldCom	Cable & Wireless	Qwest	IXC	Williams	Frontier	LCI
0721	PAHRUMP (NV)	6	X	X	X	X			X	X		
0720	RENO (NV)	6	X	X	X	X		X			X	
0974	ROCHESTER (NY)	6	X	X	X			X		X	X	
0740	SAN LUIS OBISPO (C)	6	X	X	X	X		X			X	
0534	TOPEKA (KS)	6	X	X	X	X		X			X	
0334	AUBURNHUNTINGTON	5	X	X	X	X						X
0492	BATON ROUGE (LA)	5	X	X	X	X				X		
0562	BEAUMONT (TX)	5	X	X	X	X		X				
0476	BIRMINGHAM (AL)	5	X	X	X	X				X		
0724	CHICO (CA)	5	X	X	X			X			X	
0434	COLUMBIA (SC)	5	X	X	X	X		X				
0564	CORPUS CHRISTI (TX)	5	X	X	X	X			X			
0246	CULPEPER (VA)	5	X	X	X			X			X	
0456	DAYTONA BEACH (FL)	5	X	X	X			X		X		
0939	FORT MYERS (FL)	5	X	X	X	X		X				
0652	IDAHO (ID)	5	X	X	X				X	X		
0482	JACKSON (MS)	5	X	X	X	X				X		
0480	MOBILE (AL)	5	X	X	X	X		X				
0736	MONTEREY (CA)	5	X	X	X			X			X	
0350	NORTHEAST (WI)	5	X	X	X			X			X	
0352	NORTHWEST (WI)	5	X	X	X			X			X	
0464	OWENSBORO (KY)	5	X	X	X			X			X	
0448	PENSACOLA (FL)	5	X	X	X	X		X				
0133	POUGHKEEPSIE (NY)	5	X	X	X			X			X	
0620	ROCHESTER (MN)	5	X	X	X			X			X	
0951	ROCKY MOUNT (NC)	5	X	X	X			X			X	
0738	STOCKTON (CA)	5	X	X	X	X		X				
0953	TALLAHASSEE (FL)	5	X	X	X	X		X				
0126	WESTERN MASSACHUSET	5	X	X	X			X			X	
0550	ABILENE (TX)	4	X	X	X				X			
0444	ALBANY (GA)	4	X	X	X			X				
0230	ALTOONA (PA)	4	X	X	X						X	
0220	ATLANTIC COASTAL (4	X	X	X	X						
0442	AUGUSTA (GA)	4	X		X	X		X				
0635	CEDAR RAPIDS (IA)	4	X	X							X	
0436	CHARLESTON (SC)	4	X	X	X	X						
0254	CHARLESTON (WV)	4	X	X	X	X						
0256	CLARKSBURG (WV)	4	X	X	X	X						
0924	ERIE (PA)	4	X	X	X						X	
0330	EVANSVILLE (IN)	4	X	X	X							X
0636	FARGO (ND)	4	X	X	X	X						
0432	FLORENCE (SC)	4	X	X	X	X						
0454	GAINESVILLE (FL)	4	X	X	X	X						
0240	HAGERSTOWN (MD)	4	X	X	X	X						
0570	HEARNE (TX)	4	X	X	X			X				
0474	KNOXVILLE (TN)	4	X	X	X	X						
0488	LAFAYETTE (LA)	4	X	X	X			X				
0528	LITTLE ROCK (AR)	4	X	X	X	X						
0544	LUBBOCK (TX)	4	X	X	X				X			
0250	LYNCHBURG (VA)	4	X	X	X	X						
0446	MACON (GA)	4	X	X	X			X				
0120	MAINE (ME)	4	X	X	X	X						
0923	MANSFIELD (OH)	4	X	X	X							X
0542	MIDLAND (TX)	4	X	X	X				X			
0232	NORTHEAST (PA)	4	X	X	X	X						
0450	PANAMA CITY (FL)	4	X	X	X	X						
0937	RICHMOND (IN)	4	X	X	X							X
0244	ROANOKE (VA)	4	X	X	X	X						
0344	SAGINAW (MI)	4	X	X	X							
0961	SAN ANGELO (TX)	4	X	X	X				X			
0440	SAVANNAH (GA)	4	X	X	X			X	X			
0354	SOUTHWEST (WI)	4	X	X	X	X						
0676	SPOKANE (WA)	4	X	X	X	X						
0522	SPRINGFIELD (MO)	4	X	X	X				X			
0342	UPPER PENINSULA (M	4	X	X	X						X	
0556	WACO (TX)	4	X	X	X				X			
0532	WICHITA (KS)	4	X	X	X	X						
0466	WINCHESTER (KY)	4	X	X	X	X						
0546	AMARILLO (TX)	3	X	X	X							
0420	ASHEVILLE (NC)	3	X	X	X							
0650	BILLINGS (MT)	3	X	X	X							
0484	BILOXI (MS)	3	X	X	X							

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			AT&T	MCI	Sprint	WorldCom	Cable & Wireless	Qwest	DXC	Williams	Frontier	LCI
0138	BINGHAMTON (NY)	3	X	X	X							
0638	BISMARCK (ND)	3	X	X	X							
0338	BLOOMINGTON (IN)	3	X	X	X							
0932	BLUEFIELD (WV)	3	X	X	X							
0966	BRISTOL (TN)	3	X	X	X							
0568	BROWNSVILLE (TX)	3	X	X	X							
0362	CAIRO (IL)	3	X	X	X							
0370	CHAMPAIGN (IL)	3	X	X	X							
0928	CHARLOTTESVILLE (V)	3	X	X	X							
0990	COEUR D'ALENE (ID)	3	X	X	X							
0834	DAVENPORT (IA)	3	X	X	X							
0824	DULUTH (MN)	3	X	X	X							
0929	EDINBURG (VA)	3	X	X	X							
0949	FAYETTEVILLE (NC)	3	X	X	X							
0366	FORREST (IL)	3	X	X	X							
0526	FORT SMITH (AR)	3	X	X	X							
0977	GALESBURG (IL)	3	X	X	X							
0646	GRAND ISLAND (NE)	3	X	X	X							
0648	GREAT FALLS (MT)	3	X	X	X							
0927	HARRISONBURG (VA)	3	X	X	X							
0834	HAWAII (HI)	3	X	X	X							
0477	HUNTSVILLE (AL)	3	X	X	X							
0554	LONGVIEW (TX)	3	X	X	X							
0478	MONTGOMERY (AL)	3	X	X	X							
0122	NEW HAMPSHIRE (NH)	3	X	X	X							
0978	OLNEY (IL)	3	X	X	X							
0973	PALM SPRINGS (CA)	3	X	X	X							
0368	PEORIA (IL)	3	X	X	X							
0530	PINE BLUFF (AR)	3	X	X	X							
0376	QUINCY (IL)	3	X	X	X							
0360	ROCKFORD (IL)	3	X	X	X							
0630	SIOUX CITY (IA)	3	X	X	X							
0640	SOUTH DAKOTA (SD)	3	X	X	X							
0374	SPRINGFIELD (IL)	3	X	X	X							
0626	ST CLOUD (MN)	3	X	X	X							
0364	STERLING (IL)	3	X	X	X							
0938	TERRE HAUTE (IN)	3	X	X	X							
0124	VERMONT (VT)	3	X	X	X							
0521	WESTPHALIA (MO)	3	X	X	X							
0548	WICHITA FALLS (TX)	3	X	X	X							
0428	WILMINGTON (NC)	3	X	X	X							
0654	WYOMING (WY)	3	X	X	X							
0976	MATTOON (IL)	2	X	X								
0242	SALISBURY (MD)	2	X	X								
0486	SHREVEPORT (LA)	2	X	X								
0832	ALASKA (AK)	1	X									
0921	FISHERS ISLAND (NY)	1	X									
0980	NAVAJO RESV. (AZ)	1	X									
0981	NAVAJO RESV. (UT)	1	X									
0820	PUERTO RICO (PR)	1	X									
0822	US VIRGIN ISLANDS	1	X									

Source: CCM1 One! 9000 Master Rate Center File; Qwest; DXC; Williams; LCI; Frontier.

Note: Includes POPs scheduled to be deployed by 1999.

Appendix 2.3

Network Provider Points of Presence by State

State	Total Included Networks with POPs	Network Provider with POP in State									
		AT&T	MCI	Sprint	WorldCom	Cable & Wireless	Qwest	IXC	Williams	Frontier	LCI
Alaska	1	X									
Alabama	6	X	X	X	X		X		X		
Arkansas	4	X	X	X	X						
Arizona	9	X	X	X	X	X	X	X	X	X	
California	10	X	X	X	X	X	X	X	X	X	X
Colorado	8	X	X	X	X		X	X	X	X	
Connecticut	9	X	X	X	X	X	X	X	X	X	
District of Columbia	10	X	X	X	X	X	X	X	X	X	X
Delaware	6	X	X	X	X	X	X				
Florida	9	X	X	X	X	X	X	X	X	X	
Georgia	10	X	X	X	X	X	X	X	X	X	X
Hawaii	3	X	X	X							
Iowa	5	X	X	X			X			X	
Idaho	4	X	X	X					X		
Illinois	10	X	X	X	X	X	X	X	X	X	X
Indiana	10	X	X	X	X	X	X	X	X	X	X
Kansas	6	X	X	X	X		X			X	
Kentucky	8	X	X	X	X		X	X		X	X
Louisiana	8	X	X	X	X	X	X	X	X		
Massachusetts	9	X	X	X	X	X	X	X	X	X	
Maryland	8	X	X	X	X		X	X	X	X	
Maine	4	X	X	X	X						
Michigan	10	X	X	X	X	X	X	X	X	X	X
Minnesota	9	X	X	X	X	X	X	X	X	X	
Missouri	9	X	X	X	X	X	X	X	X	X	
Mississippi	5	X	X	X	X				X		
Montana	3	X	X	X							
North Carolina	9	X	X	X	X	X	X		X	X	X
North Dakota	4	X	X	X	X						
Nebraska	6	X	X	X	X		X			X	
New Hampshire	3	X	X	X							
New Jersey	10	X	X	X	X	X	X	X	X	X	X
New Mexico	7	X	X	X	X		X	X		X	
Nevada	8	X	X	X	X		X	X	X	X	
New York	10	X	X	X	X	X	X	X	X	X	X
Ohio	10	X	X	X	X	X	X	X	X	X	X
Oklahoma	8	X	X	X	X		X	X	X	X	
Oregon	7	X	X	X	X		X		X	X	
Pennsylvania	10	X	X	X	X	X	X	X	X	X	X
Rhode Island	7	X	X	X	X		X		X	X	
South Carolina	7	X	X	X	X		X		X	X	
South Dakota	3	X	X	X							
Tennessee	10	X	X	X	X	X	X	X	X	X	X
Texas	9	X	X	X	X	X	X	X	X	X	
Utah	7	X	X	X	X		X		X	X	
Virginia	9	X	X	X	X	X	X	X	X	X	
Vermont	4	X	X	X						X	
Washington	8	X	X	X	X		X	X	X	X	
Wisconsin	9	X	X	X	X	X	X	X	X	X	
West Virginia	4	X	X	X	X						
Wyoming	3	X	X	X							

Source: CCMi Qtel 9000 Master Rate Center File; Qwest; IXC; Williams; LCI; Frontier.

Note: Includes POPs scheduled to be deployed by 1999.

UUNET's North American Peering Policy

1. A peering candidate's backbone needs to meet UUNET's backbone at an agreed-upon location (which may be a common exchange point) at DS-3 speed or above. If a single DS-3 is insufficient bandwidth at a given location, the peering candidate must have the resources and must be willing to increase bandwidth at that location. Maximum utilization must be less than 50% during the average busy hour.
2. A peering candidate needs to meet UUNET at minimally four geographically diverse locations across the US. Our intention is to minimize the backhaul of traffic across both networks. Therefore, the minimum requirement would be an East-Coast location and a West-Coast location plus, ideally, two Midwest locations. We may accept a second East- or West-Coast location as an alternative to one mid-west location.
3. A peering candidate would be expected to exchange at least 40 Megabits of traffic total average utilization at the beginning of the peering relationship.
4. A peering candidate must operate a fully-redundant and diverse clear channel DS-3 network (minimum) between peering sites with spare capacity, so as not to cause traffic overload on UUNET's network in the advent of a peering failure.
5. Peers must send UUNET traffic only where UUNET advertises routes for that traffic.
6. A peering candidate must operate a 24-hour, 7-day-per-week Network Operations Center.
7. Each peering candidate must provide a free PPP account for UUNET testing and auditing purposes.
8. No peer will default into UUNET's network, especially over the peering session.
9. Each peer will give routes to UUNET using BGP4 and properly setting the next hop to be itself, the advertiser of the network. Each peer will give UUNET's network to such peer's transit customer with the peer as the next hop, not UUNET. BGP route flap from the peer must be kept to a minimum.
10. A candidate must enter into a Mutual Non-Disclosure Agreement and an Interconnection Agreement.
11. All peers will advertise consistent routes at all peering points. This is in line with UUNET's shortest exit policy.
12. UUNET will not enter into new peering arrangements at public peering points if they are congested.
13. UUNET will not enter into concurrent peering agreements with its dedicated access customers, as this is likely to lead to inconsistent route advertisements, customer complaints, and difficulty for UUNET's operations personnel in troubleshooting any potential problems.

A. MCI's Public Peering Policy

Requirements for Public Peering with internetMCI

Connectivity

Active connections to at least four, geographically dispersed public interconnection points where MCI is also connected: MAE-East, MAE-West, Ameritech NAP, PacBell NAP, Sprint NAP.

Infrastructure

Nationally deployed, order-2 meshed DS3 (45 Mbps) backbone

DS3 connectivity to interconnection points

Fully staffed, 24x7 network operations center (NOC)

Agree to establish trouble ticket and escalation procedures as needed

Routing

Carry full routing at edge routers using BGP-4 and aggregated routes

Register routes with IRR

Register routing policy with the IRR

Filter routes at the network edge, i.e., only listen to the routes that a customer has pre-registered

Consistent routing announcement (i.e., the same set of routes announced with the same AS path length at all peering locations)

Must not establish a route of last resort (i.e., default route) directed at MCI

No third party routes that allow direct traffic exchange (in either direction) between MCI and the third party.

NOTE: MCI dedicated access customers cannot qualify as a peer network.

B. MCI's Direct Peering Policy

MCI DIRECT PEERING POLICY

This document describes the criteria that MCI has established for engaging in direct peering connections. It is intended to enable the establishment of direct peering connections between internetMCI and peer networks where these exchanges are equitable and are a cost-effective alternative to the public exchanges. Having a peering relationship at the public exchange points is not a prerequisite for the establishment of a direct peering relationship. Implementations are subject to availability of peering ports and internetMCI backbone capacity in particular locations.

1. General

- Direct peering connections are at DS-3 (45 Mbps) speeds or higher.
- Direct peering connections are established on a bilateral basis. In general, these connections will be established in pairs. MCI will pay for one of the circuit connections; the direct peer will pay for the other circuit connection. Neither party will apply port, service or other charges.
- The minimum number of direct peering connections is two.
- Generally, the direct peering connections are to be geographically dispersed. Examples: - Two connections: one on the East Coast, one on the West Coast - Four connections: one on the East Coast, one on the West Coast, one in the Midwest, one in the South.
- After establishment of direct peering connections, MCI expects to terminate the peering exchanges with that same party at the public peering points, if applicable. This will enhance the exchanges of traffic with other peers at the public peering points.
- Peering and Transit (customer) relationships between two networks are mutually exclusive.

2. Infrastructure

The direct peer must:

- Have a nationally (i.e., across the eastern, midwestern, and western sections of the United States) deployed Internet backbone in the U.S. operating on dedicated circuits of at least DS-3 (45 Mbps) speed. Each backbone hub must be connected to at least two other backbone hubs.

Operate a fully staffed, 24x7 Network Operations Center (NOC)

- Agree to establish trouble ticket and escalation procedures as needed

3. Routing

The direct peer must:

- Carry full routing at edge routers using BGP-4 and aggregated routes.
- Register routes with the Internet Routing Registry (IRR)
- Register routing policy with the IRR.
- Filter routes at the network edge, i.e., only listen to the routes that a customer has pre-registered.
- Provide consistent routing announcement (i.e., the same set of routes announced with the same as path length at all peering locations).

4. Traffic

- There is a minimum traffic requirement of 20 Mbps per pair of direct DS-3 peering connections. Also, each individual DS-3 connection must carry a minimum of 5 Mbps. These traffic volumes are measured in either direction (whichever is higher) and are weekly aggregated averages. Each additional pair of direct peering DS-3 connections requires an additional 20 Mbps of traffic. Whether this criterion is met will be determined based on traffic exchanged with the prospective direct peer at the public exchange points or through other reasonable means.
- The imbalance of traffic must not be disproportionately skewed. An imbalance of traffic (in vs. out) at a ratio of up to 1.8:1 in either direction is acceptable. The imbalance of traffic is to be measured in weekly aggregates over all the points where the parties exchange traffic.

5. Term

- The direct peering agreements are annual agreements. Whether the criteria in this policy are met is to be reviewed annually.